MARKETING SCIENCE INSTITUTE

Reports

2006

WORKING PAPER SERIES

ISSUE TWO

NO. 06-002

MARKETING SCIENCE INSTITUTE

MSI Reports

2006

WORKING PAPER SERIES

ISSUE TWO

NO. 06-002

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What Drives Word-of-Mouth? The Roles of Product Originality and Usefulness

Sarit Moldovan, Jacob Goldenberg, and Amitava Chattopadhyay

How can managers create positive buzz about an innovative product? By linking product originality and usefulness to consumer word-of-mouth, this study suggests new avenues for boosting diffusion and adoption of new products.

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Report Summary

While studies agree that word-of-mouth (WOM) is important to new product success, there has been little systematic research that examines the drivers of word-of-mouth. Here, authors Moldovan, Goldenberg, and Chattopadhyay focus on the antecedents of WOM prior to product purchase or direct experience with the product. In three studies, they explore how two dimensions of innovation—originality and usefulness—affect word-of-mouth and, hence, the adoption of a new product.

The first study, based on consumers' self-reports, finds that originality and usefulness affect WOM intentions differently: while product originality increases consumers' willingness to exchange information about the product (the *amount* of WOM), product usefulness determines whether that information is positive or negative (the *valence* of WOM). Interestingly, the combination of high originality and low usefulness leads to high amounts of negative WOM, which may hasten product failure.

Based on market penetration data, their second study reaffirms that originality increases WOM and finds that usefulness, by increasing positive WOM and decreasing negative WOM, determines the market size for an innovation. The third study finds that WOM decreases over time as consumers get used to the product and it no longer appears to be original.

Overall, the results of the three studies suggest that although originality is important to generate buzz about the product, which may accelerate the diffusion of the product in the market, consumers will not adopt useless products. Further, since managers have some control over product originality and usefulness, the findings suggest that they have some control over word-of-mouth as well. By linking marketer-controlled variables to consumers' intentions to initiate WOM, these studies lay a foundation for marketing strategies that may influence market growth, speed of diffusion, and product success. ■

Introduction

The importance of innovation to new product success is often discussed in both the academic and practitioner literatures (e.g., Henard and Szymanski 2001; Howard 2000; Means and Faulkner 2000; Srinivasan et al. 2004; Tushman 1997). Innovation is usually perceived as a new idea or object (Rogers 1983), which implies that product newness, or originality, is the most important factor in its success. Recent studies, however, claim that innovation combines two major dimensions: originality and an ability to fulfill customer needs, that is, usefulness (Chandy and Tellis 1998; Gatignon and Xuereb 1997).

In this paper we explore these two dimensions and how they lead to product success via word-of-mouth. We claim that originality and usefulness play different roles in the adoption process and that originality, by itself, cannot guarantee product success. We argue that, contrary to what some have suggested (e.g., Cooper 1979; Henard and Szymanski 2001; Mishra, Kim, and Lee 1996), originality does not increase product sales, but it enhances the buzz about the product, which speeds up the rate at which people arrive at their decision to adopt or not. Usefulness, on the other hand, drives the valence of word-of-mouth (WOM); in other words, it determines whether the buzz is positive or negative. We hypothesize that high originality accompanied by low usefulness is likely to speed up the rate at which people decide to reject the product due to the spread of large amounts of negative WOM. This hypothesis has not been explored in the literature. Thus, we explore empirically how originality and usefulness influence the amount and valence of WOM about the product, and how this in turn leads to product success or failure.

From a theoretical perspective, this paper presents a conceptualization of the relationship between the central dimensions of innovation (originality and usefulness), WOM, and new product success, followed by an empirical test of this relationship using three studies, based on both consumers' self-reports and in-market sales data. From a managerial perspective, the results offer insight into how originality and usefulness drive the amount and valence of WOM, or buzz, about a product. Since managers exercise some control over these product characteristics during product development and positioning, these insights may help them improve product success.

Conceptual Underpinnings

It is well recognized that the diffusion of innovations is influenced by interactions among consumers (e.g., Day 1971; Gatignon and Robertson 1985; Katz and Lazarsfeld 1955; Mahajan, Muller, and Bass 1990; Rogers 1983). While many studies have focused on the importance of WOM to new product success (e.g., Arndt 1967; Day 1971; Herr, Kardes, and Kim 1991; Sultan, Farley, and Lehmann 1990), there has been little systematic research that examines the drivers of WOM, especially before product trial. Interestingly, research suggests that WOM spread by nonadopters may sometimes be more powerful than WOM spread by adopters of a product (Godes and Mayzlin 2004). In this paper we focus on the antecedents of WOM prior to product purchase or direct experience with the product, which, for simplicity's sake, we refer to as WOM, or buzz.

Word-of-mouth

When considering the purchase of a new product, consumers often rely heavily on WOM for information and advice (Arndt 1967; Herr, Kardes, and Kim 1991; Sheth 1971). Arndt (1967) found, for example, that 36% of surveyed consumers reported learning of an innovation through WOM, while 48% reported being influenced by WOM when making a purchase decision.

WOM communications are immediate, participatory, and provide credible and sought-after information; thus, WOM is sometimes argued to be more effective than impersonal sources of

information such as advertising (Day 1971; Dichter 1966; Gilly et al. 1998). For example, Katz and Lazarsfeld (1955) found that WOM is seven times more effective than newspaper advertising, five times stronger than a personal sales pitch, and twice as effective as radio advertising in stimulating the formation of favorable attitudes toward an innovation. Diffusion studies found that WOM is ten times more effective than media advertising (Goldenberg, Libai, and Muller 2001; see also Day 1971).

While positive WOM (PWOM) appears to be a key factor in creating a positive attitude toward a product, studies show that negative information may be more influential than positive information. Even when consumers collect a large amount of information about different product attributes before making a purchase decision, a single exposure to negative information may be sufficient cause for immediate rejection (Hauser, Urban, and Weinberg 1993; Herr, Kardes, and Kim 1991). Thus, consumers who spread negative WOM (NWOM) may undermine new product growth—and unfortunately, consumers spread more NWOM than PWOM (e.g., Anderson 1998).

Given the importance of WOM in influencing consumers' attitudes and, consequently, their decisions to purchase a new product, it is essential to understand how the dimensions of product design influence the quantity and valence of WOM. However, because of the assumption that WOM is outside the marketers' control (Arndt 1967; Bayus 1985; Day 1971; Herr, Kardes, and Kim 1991) there has been little effort to examine the link between marketer-controlled variables, such as the originality and usefulness of a new product, and WOM.

In this research we attempt to connect those marketer-controlled variables to consumers' intentions to initiate WOM, in the hope of beginning to lay a foundation for marketing strategies that are able to influence market growth, speed of diffusion, and product success (e.g., Kalish and Lilien 1986; Mahajan, Muller, and Kerin 1984; Moldovan and Goldenberg 2004).

Antecedents of word-of-mouth[1]

Research on the drivers of WOM has primarily focused on the impact that satisfaction or dissatisfaction stemming from product consumption has on WOM behavior (Anderson 1998; Dichter 1966; Sundaram, Mitra, and Webster 1998). However, there are a few papers that have focused on originality and usefulness and their effect on WOM behavior. While these studies do not comprehensively consider the two product dimensions, their separate and collective effects on WOM behavior, and their subsequent effects on market outcome, they do provide a basis for developing our hypotheses.

Research shows that more-original new products elicit greater levels of WOM than less-original new products (e.g., Bone 1992; Feick and Price 1987). Since research on new product success shows that the greater the product's originality, the greater the likelihood of market success (e.g., Carpenter, Glazer, and Nakamoto 1994; Henard and Szymanski 2001; Mishra, Kim, and Lee 1996), it is tempting to assume that the increasing amounts of WOM generated by originality is positive in valence. Introspection, however, suggests that originality per se need not always increase PWOM.

To be original, a product has to be different from what exists. Thus, increasing originality is likely to lead to feelings of surprise (Derbaix and Vanhamme 2003), an emotion that is experienced when the perceived object does not map on to expectations (Reisenzein 2000), in this instance the norms for the category. Recent work by Derbaix and Vanhamme (2003) provides correlational evidence to suggest that feelings of surprise can lead to both positive and negative WOM. Thus, while increasing originality may lead to increasing levels of WOM, the valence of the WOM need not be positive; it can also be negative. If so, contrary to what has been suggested in the past (e.g., Carpenter, Glazer, and Nakamoto 1994; Mishra, Kim, and

Lee 1996), originality alone may not be sufficient to ensure product success.

The valence of WOM may be determined by product usefulness: research shows that useless products are evaluated poorly and are highly correlated with failure (Broniarczyk and Gershoff 1997; Dahl, Chattopadhyay, and Gorn 1999; Mishra, Kim, and Lee 1996; Simonson, Carmon, and O'Curry 1994). Several studies have also found that high product performance generates PWOM (Derbaix and Vanhamme 2003; Dichter 1966; Sundaram, Mitra, and Webster 1998), while product malfunction generates NWOM (Anderson 1998; Sundaram, Mitra, and Webster 1998). Although a product's performance can be assessed only after product trial, its perceived usefulness (expected performance) can be evaluated prior to product trial and can lead to positive or negative prepurchase WOM.

H1: Originality is positively associated with the amount of word-of-mouth generated (both negative and positive).

H2: Usefulness is positively associated with positive word-of-mouth and negatively associated with negative word-of-mouth.

Since originality and usefulness have different roles in generating WOM, an increase in usefulness will increase PWOM, especially for original products, and a decrease in usefulness will increase NWOM, especially for original products. NWOM has a stronger effect and is more frequent than PWOM, since consumers find it more informative and spread it more often (Anderson 1998; Hauser, Urban, and Weinberg 1993; Herr, Kardes, and Kim 1991). We therefore expect to see an interaction between originality and usefulness, particularly for NWOM.

H3: The combination of low usefulness and high originality leads to high levels of negative word-of-mouth.

Taken together, these three hypotheses run counter to current thinking, which suggests that originality per se can drive new product success (Carpenter, Glazer, and Nakamoto 1994; Henard and Szymanski 2001; Mishra, Kim, and Lee 1996). They qualify the accepted wisdom by suggesting that originality, when combined with low usefulness, may produce strong NWOM, leading to new product failure.

Influence of new product dimensions on the adoption process

If indeed the suggested product dimensions, originality and usefulness, determine product success through the mediation of WOM, their effect should be evident in product diffusion patterns. Following diffusion theory, new product adoption is viewed as a process governed by two forces: an external force, which consists of marketing efforts, and an internal force, which consists of interactions between consumers (i.e., WOM). The diffusion of innovations is often studied using the Bass model, which enables the extraction of the coefficients of the internal and external forces from sales data (Bass 1969). A rapid growth in sales generated by high amounts of WOM will produce a steeper adoption curve, while a product launch supported by strong marketing efforts will produce a faster increase in sales following introduction. Using the Bass formula, it is possible to estimate the effects of WOM and advertising on adoption.

One limitation of the Bass model is that it tracks the number of adopters, but is unable to identify consumers who reject the product after exposure. Studies show that NWOM may reduce purchase intentions (Leonard-Barton 1985; Smith and Vogt 1995) and decrease market potential (Mahajan, Muller, and Kerin 1984). Thus, while PWOM will increase adoption and will be evident from the internal Bass coefficient, it is not possible to estimate the NWOM effect from this coefficient. Since NWOM decreases the willingness to adopt a product, its effects will be evident in the ultimate market size[2] and product success.

Based on Hypothesis 1, originality is expected to increase the amount of WOM. We therefore suggest that originality will intensify the internal-force coefficient, which represents WOM in the adoption process, and consequently will accelerate the diffusion process.

H4a: Originality is positively associated with the internal-force coefficient (word-of-mouth).

According to H2, usefulness determines the valence of WOM. Useful products will create PWOM and increase market size, while useless products will create NWOM and decrease market size.

H4b: Usefulness is positively associated with the market size.

Since this paper does not explore the effect of advertising, we do not hypothesize how originality and usefulness affect the external Bass coefficient (the effect of marketing efforts).

If indeed it is usefulness, and not originality, that increases sales, why have previous studies found originality to be responsible for market success? One explanation is that previous research used operationalizations that combined originality with usefulness. For example, Cooper (1979) found "product superiority," a construct that combines a product's innovativeness and its ability to meet customers' needs, to be the most important factor in driving product success.

Another possibility is that previous studies did not include usefulness in the equation (Henard and Szymanski 2001; Mishra, Kim, and Lee 1996). This can result in the apportioning of variance to originality as a consequence of two possible model misspecifications. First, if a model fails to recognize that originality and usefulness have different roles in the spread of WOM, as suggested in H1 and H2, it will fail to recognize that usefulness is a moderating variable that affects the relation between originality and product success: originality combined with high usefulness leads to high amounts of PWOM and product success, while originality combined with low usefulness leads to high amounts of NWOM and product failure. Henard and Szymanski (2001) mention the possibility of such a moderator effect.

Second, a model may not take into account the fact that there is likely to be a relation between originality and usefulness. Original products usually provide new utilities, or at least lead consumers to assume higher usefulness (Broniarczyk and Gershoff 1997; Carpenter, Glazer, and Nakamoto 1994). We therefore suggest that usefulness mediates between originality and product success. Thus, if usefulness is removed from the analysis, it will wrongly appear that originality is responsible for product success.

H4c: Usefulness mediates between originality and market size.

We therefore suggest that while originality increases the buzz about the product and may accelerate the diffusion of the innovation, it is usefulness that determines the final market size. However, because of the possible correlation between originality and usefulness, if one measures the effect of originality on market size without also considering the effect of usefulness, it may erroneously seem as if originality does have an effect on market size.

Study 1: Antecedents of Word-of-Mouth

Study 1 examines the relationship between the two dimensions of new products (originality and usefulness) and WOM intentions, using a range of products that vary along the two dimensions. Thus, Study 1 provides a test of hypotheses 1 through 3.

Method

Subjects. A group of 226 MBA students was recruited to participate in the study. As incentive for participation, they were eligible to

Table 1
Set of Items and Reliabilities (Study 1)

Scale	Construct label	Item	Cronbach's alpha coefficient
Product dimensions	**Originality**	**Original***	.93
		Novel	
		Unusual	
		Unique	
	Usefulness	**Useful**	.93
		Necessary	
		Beneficial	
		Fulfills a need	
Word-of-mouth (WOM)	**WOM activity**	**I intend to talk about the product**	.92
		I intend to tell many friends about the product	
		I intend to talk about the product on every occasion	
		I intend to provide as many details as I can about the product	
	PWOM	**I have good things to say about the product**	.79
		I will recommend my friends to buy the product	
	NWOM	**I have bad things to say about the product**	.70
		I will recommend that others not buy the product	

PWOM = positive word-of-mouth; NWOM = negative word-of-mouth; * Items in bold are also used in Study 3

participate in two drawings for prizes of $100 in cash, as described later.

Stimuli. Twenty new products were selected from websites covering new products, such as consumer news, innovation reports, and online stores. The products were chosen at the time of their actual introduction to the market, to ensure that participants were exposed to the products for the first time during the study. The products were selected from diverse categories and were selected to provide a broad range in terms of originality and usefulness. The products were presented using a picture and a brief description of functions and benefits.

Independent Variables. There were two independent variables: originality and usefulness. The two variables were measured along four 7-point Likert-type scales anchored by "not at all" at 1 and "very much so" at 7. The items were selected after pretesting and showed high reliability in both the pretest and the actual study.

Dependent Variables. There were three dependent variables: amount of WOM (WOM activity), positive WOM (PWOM), and negative WOM (NWOM). These were also measured using 7-point Likert-type scales anchored by "completely disagree" at 1 and "completely agree" at 7. These items were adapted from Harrison-Walker (2001; see also Westbrook 1987). Harrison-Walker (2001) developed and tested the WOM activity and PWOM scales, but treated NWOM as reverse items in the PWOM scale and removed those items. In this paper we treat PWOM and NWOM as two independent dimensions (as recommended by Westbrook 1987), and not as a single bipolar dimension, and so we used the NWOM items as a separate independent scale.

Table 1 reports the items and reliabilities for the five scales used in this study. Because in marketing there is likely to be a relation between originality and usefulness (as discussed above), we tested whether the scales were independent

Table 2
Results of the Regression Analyses (Study 1)

	WOM Activity	PWOM	NWOM
1. Originality	.37 (15.6)	.18 (8.0)	.18 (6.3)
2. Usefulness	.38 (15.7)	.60 (27.1)	–.36 (12.1)
3. Usefulness^2			.09 (5.9)
4. Originality x Usefulness			–.17 (3.0)
Adjusted R^2	**.40**	**.49**	**.16**

All variables are significant at the $p < .01$ level. The table shows the standardized regression coefficients (*t*-values in parentheses). WOM Activity = amount of word-of-mouth; PWOM = positive WOM; NWOM = negative WOM.

and whether they suffered from a common-method bias by exploring the fit of two models. In the first model, originality and usefulness are two independent constructs, and in the second model we united originality and usefulness into one construct. A confirmatory factor analysis using AMOS yielded a very good fit for the first model: $\chi 2$ (94, N = 1,287) = 780 ($p < .001$), NFI = .96, NNFI = .94, CFI = .96, and RMSEA = .075 and a very poor fit for the second model: $\chi 2$ (98, N = 1,284) = 4,298 ($p < .001$), NFI = .75, NNFI =. 70, CFI = .76, and RMSEA = .18, suggesting that originality and usefulness are two independent dimensions.

Procedure

Every week, a questionnaire containing the independent and dependent variables, along with a picture and description of one of the twenty new products, was published as a webform on a personal website. Participants received a link to each questionnaire via e-mail. At the end of the first ten weeks, there was a drawing of a $100 cash prize from among those participants who had filled out all ten questionnaires during this period. A second drawing was held at the end of the study (at 20 weeks) for the participants who had filled out all ten questionnaires during the second 10-week period. Of the 226 participants initially recruited, 140 participants completed at least one questionnaire, and 77 participants completed 10 or more questionnaires.

Hypotheses were tested by regressing ratings of WOM on ratings of product dimensions. We used regression rather than structural equations analysis in order to examine nonlinear effects that were unidentified in a structural equations model.

Results

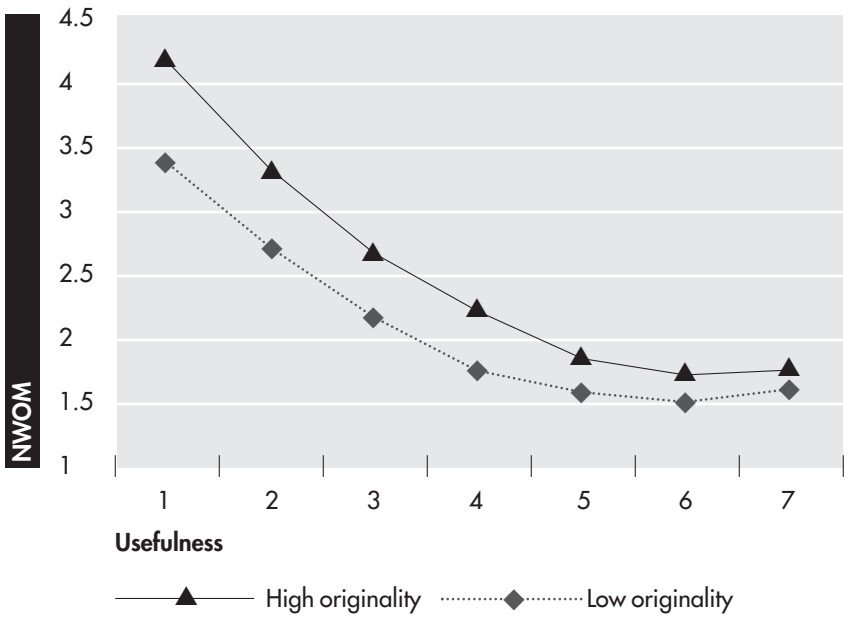
To test the hypotheses, we performed three regression analyses, using the WOM factors (WOM activity, PWOM, and NWOM) as dependent variables. In each regression, the independent variables were originality, usefulness, and the interaction between the two, as per the proposed hypotheses. Additionally, for exploratory purposes, we included the square of usefulness as an independent variable, although we did not have a formal hypothesis, because a few studies have reported that there may be a nonlinear effect of usefulness on consumer responses, although WOM was not explicitly studied (e.g., Anderson and Mittal 2002). Thus, in each of the three regressions there were four independent variables.

Because we included an interaction effect, we used the centered scores of the independent variables,[3] as recommended by Aiken and West (1991). The results of the regressions are presented in Table 2. For ease of communication, we report only the significant effects. As the table shows, all the hypothesized paths received support, as did the additional nonlinear path. The results are discussed below.

In Hypothesis 1 we predicted that consumers would spread more WOM about original products, but unlike previous studies that assumed that originality leads to PWOM, we suggested that originality can lead to either PWOM or NWOM. The results support our hypothesis. As can be seen in Table 2 (line 1), originality increases the intentions to spread WOM, and PWOM—a result that corroborates the findings of past research. However, Study 1 also showed a strong effect of originality in inducing NWOM, which may lead to product failure. This is a new finding.

Figure 1

Interaction Between Usefulness and Originality on Negative Word-of-Mouth



According to Hypothesis 2, usefulness determines the valence of WOM, or whether consumers will spread positive or negative WOM about the product. The results support the hypothesis: High usefulness increases PWOM, while low usefulness increases NWOM (see line 2 in Table 2).

Interestingly, usefulness was found to have a nonlinear asymptotic effect on NWOM (Table 2, line 3): high to medium usefulness generates little NWOM, but low usefulness increases NWOM intentions sharply. Anderson and Mittal (2000) found a similar nonlinearity for product attributes: expected product attributes ("satisfaction-maintaining" attributes) create high dissatisfaction when absent, but no satisfaction when they are present. Usefulness may play the same role. It may be an expected requirement, and its absence increases NWOM quickly.

Since negative information is spread more readily than positive information, we expected to see that the combination of high originality and low usefulness would generate high amounts of NWOM. This interaction was indeed found (Table 2, line 4). By dividing the data into high and low originality using median split and regressing usefulness on NWOM, we can clearly see the nonlinear effect of usefulness and the interaction between usefulness and originality (see Figure 1). Low levels of usefulness generate high amounts of NWOM, especially for high originality. As noted before, although originality has been perceived to be one of the most important factors driving product success, this interaction shows that in the absence of usefulness, originality, by stimulating high amounts of NWOM, may lead to product failure.

Summary

The data show that while originality and usefulness influence people's intentions to spread WOM about the product, the two dimensions influence consumers in different ways: originality influences how much consumers talk, while usefulness affects what they say.

This study shows that WOM, which is usually perceived as an important but uncontrolled effect, can be controlled and influenced by managing the two key aspects of an innovative new product: its originality and usefulness. In addition, this study shows that WOM can be generated before any purchase or use of the product, which can sometimes be even more important than WOM spread by adopters (Godes and Mayzlin 2004). Having seen that usefulness and originality affect WOM prior to purchase, we decided in our second study to test how they affect the diffusion of innovation and whether they lead to product success.

Study 2: Influence of New Product Dimensions on the Adoption Process

If consumers act as reported in Study 1, the effect of their WOM should be evident in sales data. In this study, we reexamine our main hypotheses, that originality affects the amount of WOM and usefulness its valence, using

aggregate sales data. We also show how originality and usefulness influence the final market size, or product success. Thus, Study 2 provides a test of hypotheses 4a-c and tests if the findings of Study 1 are strong enough to influence market dynamics.

Data

In order to explore hypotheses 4a-c, we used a data set published by Lilien, Rangaswamy, and Van Den Bulte (2000, p. 300) that contains 54 products and their yearly penetration data. The authors reported the estimated Bass diffusion coefficients (WOM effect, marketing efforts, and the market size as percent of the total market) for "long" and "short" data series: in long data series the authors used the entire yearly sales data of the products, while in the short data series the authors removed sales data for the years after the peak. Thus, in the short data series, they estimated the Bass coefficients based on sales until product maturity, which is more likely to be prior to possible repeat purchase or replacement. This procedure is widely accepted in estimations of adoption curves (Easingwood, Mahajan, and Muller 1983). We used the Bass coefficients as provided and tested both series for our hypotheses. The data set includes three industrial product categories (agricultural, medical, and production technology), in addition to consumer electronics and appliances. We removed the industrial products from the analysis in order to increase the coherence of the data set.

We asked two judges to rate each product on originality and usefulness. The judges were researchers who have long experience in innovation research. Since perceptions of originality and usefulness may change over time, we requested the judges to estimate how the products were perceived at the time they were launched. The judges rated each product's originality and usefulness on a 1-7 scale (between-judges agreement was 96%).

We used the Delphi procedure, which is suitable for technology assessment, to resolve disagreements. Disagreement was not resolved for two products' usefulness, and they were consequently removed from the data set.[4] In addition, two outliers that had a very high internal coefficient were removed from the analysis, leaving a total of 34 products. We employed two regression analyses to explore hypotheses 4a and 4b, with the WOM coefficient and market size, respectively, as the dependent variables, and originality and usefulness as the two independent variables. While Study 1 shows that the combination of high originality and low usefulness leads to high amounts of NWOM, we would expect to find the same interaction and nonlinear effect in this data. However, none of the products in this data was identified as combining low usefulness and high originality. Given the data, we did not expect that the interaction between originality and usefulness, or the nonlinear effect of usefulness, would have a significant effect on WOM or market size.

In order to explore H4c, which states that usefulness mediates between originality and market size, we need to meet four conditions (Baron and Kenny 1986): originality, by itself, should affect market size; originality, by itself, should affect usefulness; originality should not affect market size in the presence of usefulness; and usefulness should affect market size in the presence of originality. We therefore ran two additional regressions with market size and usefulness, respectively, as the dependent variables, and originality as the independent variable.

Results

Table 3 presents the results of the regression analyses exploring the effect of products' originality and usefulness on WOM and on market size and exploring the effect of originality on usefulness (for the mediation analysis). The same regressions were estimated for the long (full data) and short (data until peak) data series.

Hypothesis 4a predicts that originality affects the internal coefficient (WOM); however, since originality does not determine whether WOM

Table 3
Results of the Regression Analyses (Study 2)

	1. Word-of-mouth Predicted by O and U	**2. Market size** Predicted by O and U	**3. Market size** Predicted by O	**4. Usefulness** Predicted by O
Long Data Series				
Originality (O)	.51* (2.6)	–.03^{NS} (.16)	.21^{NS} (1.1)	.54** (3.6)
Usefulness (U)	–.19^{NS} (.97)	.44* (2.3)	–	–
Adjusted R^2	.14*	.13*	.01^{NS}	.27**
Short Data Series				
Originality (O)	.51* (2.7)	.09^{NS} (.51)	.33* (2.0)	.54** (3.6)
Usefulness (U)	–.13^{NS} (.13)	.44* (2.4)	–	–
Adjusted R^2	.15*	.20**	.08*	.27**

* Significant at the $p < .05$ level; ** Significant at the $p < .01$ level; ^{NS}Not significant.
The table shows the standardized coefficients of product originality and usefulness (*t*-values in parentheses).

will be positive or negative, it should not affect market size or product success. Regressions 1 and 2 support this hypothesis, for both short and long data series: while originality has a strong effect on WOM, it has no effect on market size or, ultimately, on the success of the product.

While originality enhances the spread of WOM about the product, we predicted that usefulness, which affects the valence of WOM, would determine the market size (H4b). This hypothesis is also supported by regressions 1 and 2: while usefulness does not affect the amount of WOM, it does affect the size of the market, and may lead to product success. We also explored the effect of the interaction between originality and usefulness on WOM and on market size and found, as we expected, that this interaction is not significant. Study 1 had shown that a combination of high originality and low usefulness leads to high amounts of NWOM, but, as already noted, none of the products in Study 2's data set combines high originality with low usefulness, so it is not surprising that we did not find an interaction between originality and usefulness in Study 2.

In order to understand why some studies show that originality does have an effect on market size, we ran a mediation analysis, as we hypothesize that usefulness mediates the effect of originality on market size (H4c). As can be seen in regressions 2-4, this hypothesis is supported only for the short data series: although originality affects market size when one ignores the effect of usefulness, once usefulness is added to the equation, originality has no effect on market size. Originality's effect on market size is driven by its effect on perceived usefulness. Thus, if usefulness is not considered, studies may erroneously conclude that originality has an effect on the size of the market. Possibly, consumers assume that a new product's original attributes deliver some new uses (Broniarczyk and Gershoff 1997; Carpenter, Glazer, and Nakamoto 1994).[5] This mediation is not found for long data series, in which originality has no effect on market size at all, even when usefulness is not considered. Our failure to observe the mediation effect in the long data series could be due to the fact that this data series includes repeat purchase and replacement, which might influence the market size estimation accuracy (Easingwood, Mahajan, and Muller 1983). We will return to this concern shortly.

Summary

Study 2 reaffirms that originality and usefulness have different roles in the diffusion of innovation. Consumers may be encouraged to talk

more by the originality of a new product, but when it comes down to the purchase decision, consumers adopt because of the favorableness of what is said, and that depends on the product's usefulness. Contrary to previous findings, originality is not directly linked to product success, and its effect on sales derives from its effect on usefulness. Originality is, however, the main determinant of buzz about a product, which may accelerate the diffusion of the innovation. This may explain why originality, "the buzz generator," is perceived to be so important and leads to higher firm value in the eyes of shareholders (Srinivasan et al. 2004).

Study 2 strengthens and extends the results of Study 1 in two ways: first, it shows that intentions to spread WOM, as reported by consumers, are reflected in actual behavior, as evidenced in penetration data. Second, Study 2 connects the effect of originality and usefulness to the ultimate market size, or product success.

We turn now to our failure to find a mediating role for originality in the long data series. As suggested above, one reason for that is that long-run sales are affected by replacement and repeat purchase; thus it is more relevant to extract the Bass coefficients from the early years of sales (Easingwood, Mahajan, and Muller 1983). Another possible reason is that consumers' perceptions of originality and usefulness and the WOM they generate may change over time, which may affect the diffusion coefficients in the long run. Study 3 was designed to explore how perceptions of product originality change over time and how these changes, in turn, affect WOM.

Study 3: Effect of Time

Thus far, we have shown that originality affects the amount of WOM generated and that usefulness affects the valence of WOM. Since perceptions of originality are based on the newness of the product, they are likely to change over time, and this in turn may affect WOM intentions.

While previous research has documented a decline in WOM as a function of time, those studies have (1) derived the decline from aggregate data, using the Bass model, and (2) the explanation they have advanced is based on differences among the key buying segments over time. For instance, Easingwood, Mahajan, and Muller (1983) and Mahajan and Muller (1998) suggested that early adopters spread more WOM than the main market (Rogers 1983); they argued that this accounts for the decline in WOM over time. Hernes (1976) suggested that changes in WOM over time may be due to changes in purchasing power, income, or risk taking, and a reduction in the social contacts of the particular buyers. However, while these explanations have been offered, there has been no effort to test them empirically (Easingwood, Mahajan, and Muller 1983).

In this study, we propose and test an alternative explanation for the decrease in WOM over time. We suggest that the amount of WOM decreases over time due to a decline in the perceived originality of the product. Our hypothesis is consistent with the theorizing of Hernes (1976), who suggested that one of the reasons for the observed changes in the spread of WOM over time may be the fading of the stimulus's impact over time.

Why do we expect perceived originality to decline over time? Derbaix and Vanhamme (2003) theorize that originality creates surprise, which drives WOM, but also speculate that surprise is a short-term emotion. If so, WOM should decline as the experience of surprise dissipates. Thus, repeated exposure to the product over time will diminish the novelty generated by the product and decrease its perceived originality. Once consumers get used to the surprise created by the product's originality, the WOM they tend to spread about it is likely to be reduced. Perceived usefulness, on the other hand, is assumed to be less affected by repeat exposure to the product, to the extent that there has been no product trial. We therefore expect to see that both perceived originality and WOM will de-

crease over time. Since the decrease in WOM is a result of the decrease in originality, as a function of repeated exposure over time, we expect that the effect of time on WOM will be mediated by originality.

H5a: Perceived originality decreases with repeated exposure and over time.

H5b: Word-of-mouth decreases with repeated exposure and over time.

H5c: The effect of repeated exposure over time on word-of-mouth is mediated by perceived originality.

Method

Study 3 employed a methodology similar to that of Study 1, but was performed over time. We used the same product dimensions and WOM intentions scales, with the following change: Constructs that had four items were reduced to the three items that loaded most highly on the construct (items in bold in Table 1). The reliability of the five measured constructs was as follows: originality .91, usefulness .93, amount of WOM .88, PWOM .81, and NWOM .69.

For this study, 653 MBA students were recruited from three universities. Each week a webform with a product description and a questionnaire measuring the five constructs noted above was sent by e-mail to each participant. For the first five weeks, a new product was sent each week; we refer to this as the first run. After the first run was over, there was a break of three weeks (winter break), after which the same set of products, in the same order, was sent again; referred to as the second run. Immediately after the second run, we ran the five questionnaires a third time. Thus there was an eight-week break between the run of the first and second questionnaire for each product and a five-week break between the second and third run. At the end of the study, participants drew for a cash prize of $200.

In this study we again selected products that were recently launched into the market; we chose office supplies, as those products are of relevance to the student population. Products were chosen to vary on their usefulness and originality based on a weekly pretest rated by three judges who were neither the authors nor members of the panel. Between-judges agreement was 83%.

Each of the five products was rated three times, which creates a potential of five observations with three repeated measurements per respondent. Three hundred eleven participants completed at least one questionnaire, and the final data set consisted of 1,238 complete observations that had data for all three time periods.

Results

Replication of Study 1's Results. In order to test whether the new data replicated the results of Study 1, we performed similar regression analyses for each of the three time periods. As presented in Table 4, results replicated the results of Study 1 in all three time periods. Since we showed in Study 1 that usefulness has a nonlinear effect on NWOM, we tested it once again in this study, and found further support for the idea that usefulness behaves as a satisfaction-maintaining attribute that is taken for granted when present, but creates high dissatisfaction when absent (Anderson and Mittal 2000).

Test of Hypotheses 5a, b, and c. H5a predicts that since originality is related to surprise, which is a short-term emotion, the perception of originality will fade over time, with repeated exposures, as the product will seem less novel and interesting. In an analysis of variance for repeat measures, when the repeat measure is originality over time, we found that indeed consumers report that the same products seem less original as they are exposed to them again ($Ot_1 = 3.6$, $Ot_2 = 3.1$, $Ot_3 = 2.9$, $F(2, 1036) = 77$, $p < .01$; planned contrasts comparing Ot_2 with Ot_1 and Ot_3 with Ot_2 were both statistically significant at $p < .01$).

According to H5b, we expected to see WOM decrease over time. Again, when running an

Table 4
Results of the Regression Analyses (Study 3)

	WOM Activity			PWOM			NWOM		
	Time Period			Time Period			Time Period		
	1	2	3	1	2	3	1	2	3
Originality (O)	.35** (13)	.38** (10)	.33** (8)	.26** (12)	.32** (10)	.30** (8)	.18** (6)	.22** (5)	.16** (3)
Usefulness (U)	.30** (11)	.21** (5)	.21** (5)	.56** (25)	.44** (14)	.44** (13)	−.34** (11)	−.25** (6)	−.25** (6)
Usefulness^2							.15** (5)	.12** (3)	. 13** (3)
O x U							−.09** (3)	−.10* (2)	−.15** (3)
Adjusted R^2	.30**	.27**	.22**	.50**	.44**	.41**	.15**	.06**	.05**

* Significant at the $p < .05$ level; **Significant at the $p < .01$ level; The table shows the standardized regression coefficients (*t*-values in parentheses). WOM Activity = amount of word-of-mouth; PWOM = positive WOM; NWOM = negative WOM; O x U = originality x usefulness interaction.

analysis of variance with repeated measures of WOM over time, we did see WOM decrease over time ($WOMt_1 = 2.3$, $WOMt_2 = 1.8$, $WOMt_3 = 1.6$, $F(2, 1036) = 183$, $p < .01$; planned contrasts comparing $WOMt_2$ with $WOMt_1$ and $WOMt_3$ with $WOMt_2$ were both statistically significant at $p < .01$). While previous studies used the Bass model to trace the decreases of WOM over time (Easingwood, Mahajan, and Muller 1983; Mahajan and Muller 1998), this study used data obtained directly from individual consumers to show that they will spread less WOM about the product over time.

Previous studies assumed that WOM decreases over time because of changes in the type of consumer (e.g., innovators, early adopters) during the course of the diffusion process, while our alternative explanation is that it is the decrease in perceived originality, not changes in the consumers, that causes the decrease in WOM. In order to examine whether the effect of time on WOM is mediated by originality, which will show that WOM is not changing simply because of time or repeated exposure, but because of the decrease in originality, four conditions need to be met (Baron and Kenny 1986). The first two conditions, that both originality and WOM should decrease over time, have already been met, as shown above. The third and fourth conditions are that when originality is covaried out, WOM should not change over time, and the covariates used in the analysis should be significant. In order to examine the last two conditions, we ran another analysis of variance with repeated measures of WOM over time and added originality, measured at each point in time as three covariates (Ot_1, Ot_2, Ot_3). Results showed that the decrease in WOM over time is not significant ($F(2, 1028) = .06$, NS) when originality is covaried out, while the three covariates of originality are significant (Ot_1: $F(1, 514) = 4$, $p < .05$; Ot_2: $F(1, 514) = 11$, $p < .01$; Ot_3: $F(1, 514) = 16$, $p < .01$).[6] Thus the results show that WOM does not decrease simply because of repeated exposures or over time, but as a result of the decrease in the perceptions of originality, as hypothesized.

Discussion

This paper examined two product dimensions, originality and usefulness, their different roles in the generation of WOM communications about the product, and how they lead to product success. The literature in marketing claims that in many cases WOM is crucial to product success, as are originality and usefulness. It is therefore interesting to understand how these dimensions affect WOM and, thus, product success, and consequently learn how marketers can manage WOM to their advantage.

In Study 1 we showed that originality and usefulness affect WOM intentions differently: while product originality increases consumers' willingness to exchange information and WOM (either positive or negative) about the product, product usefulness, by determining attitudes toward the product, is responsible for the valence of WOM (positive or negative). Interestingly, the combination of high originality and low usefulness leads to high amounts of NWOM, which means that originality may, in some cases, lead to product failure.

In Study 2 we used market penetration data to reaffirm that originality increases WOM and to show that usefulness, by increasing PWOM and decreasing NWOM, determines the market size. These results confirm that the self-reported intentions of the participants in Study 1 to spread WOM are reflected in the diffusion of products in the market, and can be extracted from sales data. The results of studies 1 and 2 refute the findings of previous studies that stressed the importance of originality in product success (Carpenter, Glazer, and Nakamoto 1994; Henard and Szymanski 2001; Mishra, Kim, and Lee 1996). Although originality may seem important to product success when usefulness is not considered, when both usefulness *and* originality are considered, it turns out that originality has no effect on market size, and cannot lead, by itself, to product success. Originality is, however, important in generating a buzz about the product, which may accelerate the diffusion of the product in the market. On the other hand, buzz may create a false feeling of product success and may mislead investors who value it highly (Srinivasan et al. 2004).

In Study 3, we examined perceptions of originality and how changes in these perceptions over time affect intentions to spread WOM. This study found that WOM decreases over time as a result of a decrease in perceptions of originality. As time passes, consumers get used to the product; they no longer perceive it as surprising, and it no longer appears to be original. Consumers therefore no longer find it interesting enough to talk about.

This paper contributes to the literature in several ways. Both the literature and practice acknowledge the importance of WOM, but suggest that while it is desired, it is uncontrollable (e.g., Bayus 1985). We have shown, however, that WOM can be managed and controlled using the key dimensions of new product design, originality and usefulness.

We have shown that originality and usefulness have different roles in generating WOM and in determining whether a product will be successful. Previous studies extensively examined these two dimensions separately; by contrast, we created a detailed model of (1) the two dimensions together and the interaction between them, (2) their effect on both positive and negative WOM, and (3) the consequent effect on product success. Our set of hypotheses and our three studies have drawn a coherent representation of the effects of these two dimensions, and they integrate into previous literature to resolve some inconsistencies. For example, a meta-analysis showed that while usefulness is highly related to market performance, originality varies between a positive and a negative effect on performance (Henard and Szymanski 2001). In fact Cooper (1979) found that innovativeness is important to performance, but being first in the market has no effect, which may seem contradictory. Henard and Szymanski (2001) concluded that originality is probably moderated by another unknown factor. We suggest that usefulness is that moderator, which explains why originality can have either a positive or negative effect on product success—it all depends on the product's usefulness. We also found that usefulness mediates between originality and product success, thus if usefulness is not considered, originality appears to affect performance. These results explain why some papers have found that originality affects product success.

We looked at WOM before any purchase or trial of the product and laid a foundation for the idea that WOM does not have to be a result of a satisfying or disappointing experience with the product, as usually assumed in the literature

(Bayus 1985). Furthermore, we showed that prepurchase WOM affects adoption.

Understanding how to control WOM also has important managerial implications. Our research suggests that managers need to consider both originality and usefulness, which are controllable product dimensions, at the time of product design and development, and when positioning and promoting the product. Originality may create buzz, but consumers will not adopt products that they perceive to be useless, thus usefulness is the more important of the two dimensions for product success.

While this study is limited to only two product dimensions, by showing that WOM can be systematically influenced by variables under the direct control of managers, we hope to encourage further research on other product dimensions that may influence WOM. Future research could explore such facets of WOM as the characteristics of the WOM provider and receiver, consumer types (e.g., experts, opinion leaders, innovators), and the effects of marketing efforts on WOM. ■

Acknowledgments

This paper is a based on the doctoral dissertation of Sarit Moldovan. The second and third authors were co-chairs of the dissertation committee, and their order of authorship is random. The authors would like to thank Barak Libai and Guy Yogev for their help with the data in Study 2 and Donald R. Lehmann, John G. Lynch, Jr., and Eitan Muller for their helpful comments. This research was supported by grants from the Davidson Center, the Hebrew University, the Israeli Science Foundation, the Kmart International Center of Marketing and Retailing, the Marketing Science Institute, R&D INSEAD, and the Yeshaya Horowitz Association through the Center for Complexity Science.

Appendix

Antecedents of Word-of-Mouth Behavior

Construct	Effect	Literature
1. The Consumption Experience		
Satisfaction and dissatisfaction	Satisfaction and dissatisfaction theories claim that highly satisfied consumers and highly dissatisfied consumers will spread positive and negative WOM, respectively. Positive WOM will not result from a mere satisfaction, but from highly unexpected pleasure or "delight." Negative WOM will increase with the level of inconvenience that results from the bad experience, the extent to which the customer perceives that the experience was under the manufacturer's control, and the perceived responsiveness of the manufacturer to the customer's problem. Consumers are more likely to spread negative WOM if they feel that they cannot complain to the company. The amount of negative WOM generated by a disappointing product will increase as the product's price increases. Negative WOM can also result from disappointed consumers who seek their friends' advice on possible solutions to their problem.	Anderson 1998; Biyalogorsky, Gerstner, and Libai 2001; Buttle 1998; Gelb and Johnson 1995; Mangold, Miller, and Brockway 1999; Richins 1983; Sundaram, Mitra, and Webster 1998; Theng and Ng 2001
Emotions	The consumption experience is related to emotional response. Positive emotions (interest, joy) may lead to positive WOM and negative emotion (anger, disgust) may lead to negative WOM. Surprise elicited by the product may lead to both positive and negative WOM.	Derbaix and Vanhamme 2003; Gelb and Johnson 1995; Westbrook 1987

2. The Product		
Product type	Consumers spread and seek more WOM for services than for goods.	Buttle 1998; Gelb and Johnson 1995
Product newness	Product newness or novel experience will increase WOM amount because of the attention it elicits.	Bone 1992; Derbaix and Vanhamme 2003
Product performance	High performance and unique utilities will increase PWOM, while products with inadequate performance will generate NWOM.	Derbaix and Vanhamme 2003; Sundaram, Mitra, and Webster 1998
Product complexity	Complex products, products that are difficult to operate or use, or products that are easy to misuse will generate more WOM.	Smith and Vogt 1995
Perceived risk	Products that have attributes that are hard to control or predict, that have high variance in their quality, or that are associated with high risk will generate more WOM to reduce or eliminate the uncomfortable feeling of risk exposure.	Arndt 1967; Bansal and Voyer 2000; Buttle 1998; Smith and Vogt 1995
3. The Consumer		
Product involvement	Experience with the product or service may produce enthusiasm or tension that needs to be channeled out using WOM. Consumers who are involved in the product category, or have a personal interest in the product, are more likely to initiate conversations about it, regardless of their adoption of the product. Purchase intentions can also lead to high involvement and to WOM about the product. Negative WOM can be a result of anxiety, anger, and frustration relating to the product.	Dichter 1966; Feick and Price 1987; Richins and Root-Shaffer 1988; Sundaram, Mitra, and Webster 1998; Theng and Ng 2001
Self-confirmation and sociability	In many cases consumers spread WOM because they like to talk, they increase their self-esteem, or enhance their sense of social connection to others through WOM. Consumers gain attention through discussing a product or using the product as a convenient conversation topic. Consumers use WOM to show financial status, leadership, pioneering, and knowledge of new trends and to present themselves as smart buyers. They may seek confirmation for the decision to adopt the product by persuading others to adopt it as well.	Buttle 1998; Dichter 1966; Gelb and Johnson 1995; Sundaram, Mitra, and Webster 1998; Theng and Ng 2001
Altruism	In many cases consumers provide information to others because they believe that this information may help them make a good purchase and to share with them the enthusiasm in the product and its benefits. When the product or service is dissatisfying, consumers may warn their friends about its problems to help them avoid making a mistake.	Dichter 1966; Mangold, Miller, and Brockway 1999; Sundaram, Mitra, and Webster 1998
Opinion leaders	Opinion leaders are perceived to have the most influence on new product acceptance. They are highly involved in the product; they enjoy talking about it and seek to influence other's opinions. In many case opinion leaders are experts and like to present and maintain their status. Opinion leaders are also connected with more people inside and outside their network and thus spread WOM to more people and to new networks. Opinion leaders often serve as gatekeepers and may block the spread of an innovation using negative WOM.	Dichter 1966; Feick and Price 1987; Moldovan and Goldenberg 2004; Reingen and Kernan 1986; Richins and Root-Shaffer 1988
Market mavens	Market mavens are highly involved in the market and in the shopping experience in general, and they are familiar with the relevant places, prices, and sales.	Feick and Price 1987; Walsh, Gwinner, and Swanson 2004

	Market mavens enjoy learning about the market and sharing this information and feel obligated to help others.	
Early adopters	Early adopters are the first to experience new products, and they are willing to volunteer information about them. In addition, early adopters are more socially integrated, have more social connections, and show more leadership, thus they may have a strong effect on the market.	Feick and Price 1987; Midgley 1986; Rogers 1983
Information seekers	Information seekers engage in WOM to satisfy their personal information needs and actively seek information about a product or service that they find interesting. They gather data regularly on products, in preparation for future possible purchases. They are more likely to ask experts for their opinions.	Bansal and Voyer 2000; Bloch, Sherrell, and Ridgway 1986; Mangold, Miller, and Brockway 1999; Mattila and Wirtz 2002; Reingen and Kernan 1986
4. The Market		
Social ties and network	Consumers who are connected to more networks spread more WOM. WOM is more common and has a stronger effect across strong ties. Weak ties are more important in spreading WOM between networks.	Bansal and Voyer 2000; Bone 1992; Brown and Reingen 1987; Reingen and Kernan 1986
Coincidental and situational WOM	Coincidental WOM happens when two or more people are collectively trying to select a product or service and are talking about the worthiness of adopting a product or service or about its value or quality. WOM can be a result of bringing up the product or service in a random conversation and is affected by proximity to others.	Arndt 1967; Mangold, Miller, and Brockway 1999; Reingen and Kernan 1986; Theng and Ng 2001
Imitation	Observance of a purchase or its outcome can serve as a stimulant to WOM.	Mangold, Miller, and Brockway 1999
5. The Firm		
Marketing efforts	WOM communications can be stimulated by the promotional efforts of the firm. Original and unique ads and ads that use verbal play can be the topic of WOM; so can vague or ambiguous ads. When an ad is frequent and repetitive, it will generate more WOM, especially when there are not many alternative sources of information. Consumers discuss ads' effectiveness and quality.	Bayus 1985; Dichter 1966; Gelb and Johnson 1995; King and Tinkham 1990; Mangold, Miller, and Brockway 1999
Firm effect	Sometimes consumers spread WOM to promote or damage the firm. Loyalty to the firm, or familiarity with the service providers, may create positive WOM, while need for vengeance may generate negative WOM. In addition, affective commitment (consumer identification and involvement with the firm) leads to high levels of WOM.	Harrison-Walker 2001; Reingen and Kernan 1986; Sundaram, Mitra, and Webster 1998
Representatives' behavior	Friendly and helpful salespeople increase positive WOM, while inattentive, impolite salespeople generate negative WOM.	Sundaram, Mitra, and Webster 1998

Notes

1. The appendix presents a summary of the main antecedents of word-of-mouth that have been mentioned in the literature.

2. We define market size as the number of adopters at the end of the adoption process.

3. In a regression with the noncentered scores, results were very similar, with a stronger effect for the interaction.

4. Those products were a color television and a mixer. The color television, as a hedonic product, is inherently hard to

judge for usefulness. As for the mixer, the judges could not agree on whether or not it was perceived as useful at the time of its launch.

5. We also examined whether originality mediates the effect of usefulness on WOM, but when we removed the effect of originality from regression 1 in Table 3, usefulness still had no effect on WOM.

6. The effect of time on WOM is not mediated by usefulness: when usefulness is covaried out, WOM still decreases over time.

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